

Ionospheric Data Report — August 1965

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IONOSPHERIC DATA: BANGKOK, THAILAND

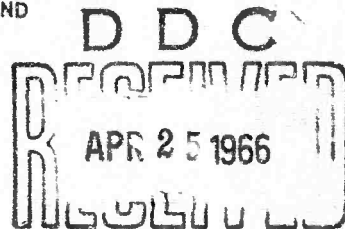
Compiled by: VICHAI T. NIMIT

Prepared for:

U.S. ARMY ELECTRONICS LABORATORIES
FORT MONMOUTH, NEW JERSEY

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SPONSORED BY THE ADVANCED RESEARCH PROJECTS AGENCY
FOR THE
THAI-U.S. MILITARY RESEARCH AND DEVELOPMENT CENTER
SUPREME COMMAND HEADQUARTERS
BANGKOK, THAILAND



STANFORD RESEARCH INSTITUTE
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I INTRODUCTION

Ionospheric observations ^{were} are being carried out at the Laboratory of the Military Research and Development Center at Bangkok, Thailand, a joint United States-Thailand organization. A Model C-2 vertical-incidence sounder supplied and operated by the United States Army Radio Propagation Agency ^{was} has been installed there. Table I gives pertinent information about the site.

Table I

VERTICAL-INCIDENCE SOUNDER SITE AT BANGKOK, THAILAND

Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
13.73°N	100.57°E	2.5°N	169.83°E

Dip angle: 10°N

Distance from dip equator: 450 km

Equipment:

Instrument: Model C-2 (modified)

PRF: 60 pps

Frequency sweep time: 30 sec

Frequency sweep range: 1 to 25 Mc

Pulse duration: 50 μ sec

Peak pulse power: approximately 18 kw.

The cooperation and participation of staff members of the Thailand Ministry of Defense and the support of the United States Advanced Research

Projects Agency, the United States Army Electronics Laboratories, and the United States Army Radio Propagation Agency made it possible for the data presented in this report to be accumulated.

II TERMINOLOGY AND SYMBOLS

The terminology and symbols used in this data report are in accordance with the conventions established by the World Wide Soundings Committee.¹

A. TERMINOLOGY

$\left. \begin{array}{l} f_o F_2 \\ f_o F_1 \\ f_o E \end{array} \right\}$ The ordinary wave critical frequency for the F_2 and F_1 layers and the E region, respectively.

$f_o E_s$ The ordinary wave top frequency corresponding to the highest frequency at which a mainly continuous E_s trace is observed.

$f_b E_s$ The blanketing frequency of an E_s layer, i.e., the lowest ordinary wave frequency at which the E_s layer begins to become transparent. (This is usually determined from the minimum frequency at which reflections from layers at greater heights are observed.)

f_{min} The frequency below which no echoes are observed.

$M(3000)F_2$ The maximum usable frequency factor for a path of 3000 km for transmission by the F_2 layer.

$h' F_2$ The minimum virtual height of the ordinary wave trace for the highest stable stratification in the F region.

$h' F$ The most significant F-region virtual height parameter, that for the lowest F-region stratification. (Thus $h' F$ is identical with the current $h' F_2$ when F-region stratification is absent, i.e., at night, and with current $h' F_1$ when F_1 stratification is present.)

¹W. R. Piggott and K. Rawer, URSI Handbook of Ionogram Interpretation and Reduction of the World Wide Sounding Committee (Elsevier Publishing Company, Amsterdam, London, New York, 1961).

B. DESCRIPTIVE LETTERS

Certain effects observed on ionograms may make it difficult or impossible to obtain accurate numerical values. The descriptive letters listed below, when used alone indicate, in general, the presence of a phenomenon that may have influenced the measurement. Qualifying letters (Sec. C) indicate the nature of the uncertainty.

- A A lower thin layer present, e.g., E_s
- B Absorption in the vicinity of f_{min}
- C Any non-ionospheric reason
- D The upper limit of the normal frequency range
- E The lower limit of the normal frequency range
- F Spread echoes present
- G Ionization density of the layer too small for measurement
- H Stratification present
- L No sufficiently definite cusp between layers of the trace
- M Ordinary and extraordinary components indistinguishable
- N Conditions such that the measurement cannot be interpreted
- O Measurement referring to the ordinary component
- R Attenuation in the vicinity of a critical frequency
- S Interference or atmospheric
- T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful
- V Forked trace
- W Echo lying outside the height range recorded
- X Measurement referring to the extraordinary component
- Y Intermittent trace
- Z Third magneto-ionic component present.

C. QUALIFYING LETTERS

- D Greater than. . .
- E Less than. . .

- I An interpolated value
- J Ordinary component characteristic deduced from the extraordinary component
- O Extraordinary component characteristic deduced from the ordinary component
- T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful
- U Uncertain numerical value
- Z Measurement deduced from the third magneto-ionic component.

D. DESCRIPTION OF STANDARD TYPES OF E_s

The eight standard types of E_s are identified by lower-case letters: f, l, c, h, q, r, a, and s. These letters suggest the corresponding names, flat, low, cusp, high, equatorial, retardation, auroral, and slant, respectively, but are not restrictive. The letter n is used to designate an E_s trace that does not correspond to one of the eight types. The classifications are:

- f An E_s trace showing no appreciable increase of height with frequency, usually relatively solid at most latitudes. (This classification may be used only at night; it appears that flat E_s traces observed in the daytime are classified according to their virtual height: h or l.)
- l A flat E_s trace at or below the normal E-region minimum virtual height in the day or below the E-region minimum virtual height at night.
- c An E_s trace showing a relatively symmetrical cusp at or below f_oE. (This is usually continuous with the normal E trace, although when the deviative absorption is large, part or all of the cusp may be missing—usually a daytime type.)
- h An E_s trace showing a discontinuity in height with the normal E-region trace at or above f_oE and an asymmetrical cusp. (The low-frequency end of the E_s trace lies clearly above the high-frequency end of the normal E trace—usually a daytime type.)
- q An E_s trace that is diffuse and nonblanketing over a wide frequency range, the spread being most pronounced at the upper edge of the trace. (This type is common in daytime in the vicinity of the magnetic equator.)
- r An E_s trace that is nonblanketing over part or all of its frequency range, showing an increase in virtual height at the high-frequency

end similar to group retardation. (This is distinguished from the usual group retardation—as in the case of an occulting thick E region—by the lack of group retardation in the F traces at corresponding frequencies and the lack of complete blanketing.)

- a An E_s pattern having a well-defined flat or gradually rising lower edge with stratified and diffuse (spread) traces present above it. (These sometimes extend over several hundred kilometers of virtual height.)
- s A diffuse E_s trace that rises steadily with frequency, usually emerging from another type of E_s trace. (The rising trace alone is classified as s; the horizontal trace is classified separately. At high latitudes, the slant trace usually starts to rise from a horizontal E_s trace, such as l or f, at frequencies that greatly exceed the E-region critical frequency, e.g., about 6 Mc; whereas at low latitudes it usually rises from equatorial-type E_s, q, c, or h, at frequencies near the regular E critical frequency. Type s is never used to determine f_o E unless echoes clearly identifiable as E_s echoes are seen.)
- n An E trace that cannot be classified as one of the standard types. (This must not be used for intermediate cases between any two classes. A choice should always be made whenever possible, even if it is doubtful.)

E. MULTIPLE REFLECTIONS FROM E_s

When the ionogram shows the presence of multiple reflections from E_s, the number of traces seen will be recorded with the letter indicating the type.

Characteristic: fmin

IONOSPHERIC DATA

Sweep: 1 Mc to 25 Mc in 0.5
August 1965

Observed at:

Bangkok, Thailand

Lat. 13.73° N, Long. 100.57° E

105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	E030S	E014S	E016S	017*	E	E015S	E020S	E022S	E027S	E025S	E030S	E030S	E030S
2	E020S	E014S	E016S	E012S	E	E016S	E020S	E025S	E022S	E023S	E028S	C	E028S
3	E020S	E017S	E013S	E	E012S	A	E020S	E023S	E024S	E025S	E030S	E028S	E030S
4	E023S	E017S	E016S	E012S	E	E015S	E021S	E020S	E020S	E024S	E025S	E026S	E030S
5	E020S	E	E	E	E	E015S	E020S	E023S	E023S	E026S	C	C	E030S
6	E021S	E014S	E015S	E	E	E014S	E020S	E023S	E028S	E028S	E025S	E027S	E030S
7	E020S	E014S	E014S	E	E	E013S	E020S	E023S	E023S	E027S	E030S	E030S	E030S
8	E020S	E014S	E014S	E	E	E016S	E022S	E023S	E029S	E026S	038	E030S	E030S
9	E019S	E014S	E	E	E	E015S	E022S	E022S	E025S	E023S	E029S	E030S	E030S
10	E022S	E014S	E	E	E	E015S	E020S	E020S	E028S	E027S	E028S	E030S	E030S
11	E020S	E018S	E015S	E016S	E014S	E016S	E022S	E027S	E028S	035	036	E037S	E037S
12	024	E020S	E012S	E	E	E014S	E020S	E024S	E025S	E026S	E033S	E025S	E030S
13	E020S	E018S	E	E	E016S	E014S	E022S	E022S	E030S	C	C	C	E030S
14	C	C	C	C	C	C	C	C	C	C	C	C	E030S
15	E020S	E014S	E013S	E	E	E013S	E020S	E020S	E030S	E033S	C	C	E030S
16	E018S	E	E	E	E	E015S	E020S	E020S	E024S	E025S	E027S	E045S	E030S
17	E020S	E014S	E012S	E	E	E013S	E020S	E024S	E030S	E034S	E038S	E029S	E030S
18	E020S	E016S	E017S	E	E	E019S	E026S	E026S	E029S	E030S	E030S	E030S	E030S
19	E020S	E	E	E	E	E015S	E025S	E027S	E028S	E031S	E028S	E030S	E030S
20	E022S	E017S	E	E	E	E019S	E025S	E028S	E030S	E030S	E030S	E030S	E030S
21	E023S	E016S	E	E	E	E016S	E027S	E026S	E030S	E030S	E038S	E038S	E038S
22	E022S	E014S	E	E	E	E018S	E020S	E024S	E027S	E028S	E029S	E028S	E030S
23	E022S	E012S	E	E	E	E014S	E020S	E022S	E025S	E028S	E029S	E030S	E030S
24	E022S	E	E	E	E	B	E025S	E024S	E025S	E031S	E030S	E036S	E030S
25	C	C	C	C	C	C	C	C	C	E031S	E035S	E040S	E030S
26	E029S	E	E	E	E	E017S	E025S	E022S	E026S	E027S	E034S	E035S	E030S
27	E022S	E015S	E	E	E	E025S	E028S	E025S	E030S	E025S	E030S	E030S	E030S
28	E	E020S	E	E	E	E017S	E024S	E025S	E030S	E034S	E034S	E032S	E030S
29	E023S	E020S	E	E	E	E016S	E028S	E027S	E029S	E030S	E032S	E030S	E030S
30	E020S	E022S	E	E	E	B	E026S	E027S	E024S	E030S	E028S	E040S	E030S
31	E029S	E020S	E	E	E	E020S	E028S	E026S	E028S	E029S	E030S	E033S	E030S
Median	020	016	014	014	014	015	022	024	028	028	030	030	
Count	28	24	12	4	5	26	29	29	26	29	27	26	
UQ	022	018	016	016	015	017	025	026	030	030	034	035	
LQ	020	014	013	012	013	014	020	022	025	026	028	030	
QR	002	004	003	004	002	003	003	004	005	004	006	005	

* Tabulation of 017 = 1.7 Mc.

ERIC DATA
25 Mc in 0.5 minute
1965

11	12	13	14	15	16	17	18	19	20	21	22	23
E030S	E030S	E030S	E030S	E030S	E022S	E020S	E023S	EC21S	E020S	E020S	B	E020S
C	E028S	E030S	E025S	E025S	E023S	E030S	E020S	E020S	E022S	E022S	E028S	E023S
E028S	E030S	E030S	E030S	E027S	EC21S	E020S	E020S	E020S	E022S	E022S	E022S	E021S
EC26S	E030S	E026S	E025S	E030S	E020S	E020S	E020S	E021S	E023S	E022S	E020S	E020S
C	E030S	E030S	E027S	E024S	E024S	E023S	E020S	E026S	E020S	E022S	E024S	E022S
E027S	EC28S	E026S	E023S	E033S	E025S	E020S	E020S	E022S	E022S	E022S	E020S	E022S
E030S	E029S	E028S	E025S	E022S	E022S	E021S	E020S	E020S	G30	G29	O29	E023S
EC030S	E040S	E030S	E031S	E021S	031	E030S	E023S	E023S	E020S	E021S	E020S	E020S
E030S	E030S	E030S	E028S	E026S	C	E020S	E019S	E021S	EC20S	E020S	E020S	E021S
E030S	E030S	E027S	E025S	C	C	E020S	E020S	E024S	E020S	E020S	E020S	E030S
E037S	E040S	E040S	E040S	E025S	E033S	E021S	E020S	EC02S	E022S	025	E020S	E025S
E025S	E027S	E030S	E026S	E030S	E024S	E020S	E021S	EC20S	E022S	E022S	E020S	E020S
C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	E020S	E022S	E020S	E020S	E024S	E020S	E020S	E026S
C	C	C	E025S	E020S	E022S	E020S	E023S	E020S	E020S	E021S	E020S	E020S
E045S	E041S	E047S	E040S	E035S	B	E022S	E022S	E023S	E020S	E020S	E020S	E020S
E029S	E030S	E030S	C	B	C	E033S	E023S	E026S	E025S	E026S	E026S	S
E030S	E037S	E035S	E030S	E030S	E030S	E029S	E026S	E025S	E026S	E024S	E022S	E022S
E030S	E037S	E030S	E043S	E030S	E030S	E030S	E029S	E024S	E022S	EC21S	E022S	E025S
E030S	E030S	E030S	E030S	C	E030S	E029S	E027S	E027S	E027S	E024S	E028S	E027S
E038S	E040S	E038S	E039S	E032S	E030S	E030S	E025S	E026S	E025S	E026S	E021S	E027S
E028S	E020S	E040S	E029S	E026S	E025S	E026S	E025S	E025S	E020S	E025S	E024S	E025S
E030S	E030S	E030S	E029S	E030S	E030S	E027S	E025S	E022S	E026S	E025S	E025S	E028S
E036S	E036S	EC30S	E030S	E036S	E025S	C	C	C	C	C	C	C
E040S	E034S	E040S	E040S	E030S	E030S	E028S	E028S	E026S	E026S	E026S	E025S	E023S
E036S	E040S	E040S	C	E036S	E027S	E028S	E029S	E029S	E025S	E025S	E028S	E025S
E030S	E030S	E030S	E030S	E030S	E025S	E030S	E025S	E025S	E025S	E025S	E027S	E025S
E032S	E040S	E030S	E029S	EC03S	E027S	E025S	E027S	E025S	E028S	E026S	E025S	E024S
E030S	C	C	C	C	C	C	E028S	E025S	E028S	E025S	EC28S	E026S
E040S	EC40S	E030S	E036S	E036S	E026S	E024S	E030S	E029S	E028S	E028S	E030S	E026S
E033S	E030S	E030S	E030S	EC35S	E028S	E030S	E025S	E020S	E025S	E030S	C	C
030	030	030	030	030	025	025	023	023	023	024	022	023
26	27	27	26	25	25	28	29	29	29	29	28	27
035	040	035	031	031	030	030	027	025	026	025	027	026
030	030	030	026	026	022	020	020	020	020	021	020	021
005	010	005	005	005	003	010	007	005	006	004	007	005

Characteristic: foF2

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	U041F	S	F	A	A	A	U032S	060*	066	063	063	051	060
2	A	F	F	F	A	A	031	058	064	064	063H	063	060
3	U028F	F	F	F	S	A	029	052	061	063H	061H	058	060
4	041	031	027	023	024	017	030	060	077	079	075	072	060
5	039	U041F	U040F	U035F	F	020	031	061	071	075H	C	C	060
6	042	041	043	042	038	028	034	052	069	076	072H	058	060
7	037	026F	F	U023F	026	U015S	031	059	071	068H	057	061H	060
8	U057F	U052F	F	F	U040F	U025F	025F	057	070	072	073	075H	060
9	039	U039F	F	F	U021F	021	055	062	075	U078S	060	A	060
10	U032S	028	U027F	F	A	A	A	064	072	067H	068H	067H	060
11	023	025	022	A	F	A	029	058	065	C	063	065	060
12	041	038	034	030	025	A	032	065	067	075H	056	054	060
13	027	F	U028F	018	A	A	032	057	065	C	C	C	060
14	C	C	C	C	C	C	C	C	C	C	C	C	060
15	040	038	033	027	025	026	037	050	064	070	C	C	060
16	A	A	U021F	F	F	F	027	056	064	065H	062H	061H	060
17	042	034	030	035	033	019	031	058	062	065	066H	057	060
18	043	042	029	029	028	F	034	060	065	070	069H	060	060
19	043	041	034	028	U022F	A	031	066	066	070H	068H	070	060
20	031H	U032S	022	A	A	S	030	062	067	073H	069	065	060
21	047	046	U044S	039	030	U022S	U031S	053	066	071	071	072H	060
22	033	034	030	034	024	A	028	054	067	073H	U069R	070	060
23	F	040F	U033S	020	020	A	U030S	051	063	068H	069	070	060
24	S	F	U035F	017	A	B	031	064	067	076	075	080H	060
25	C	C	C	C	C	C	C	C	C	072H	C 8	064	060
26	A	S	S	U019S	021	A	032	063	070	070	061	059	060
27	A	S	S	027	025	A	032	057	071	065H	A	A	060
28	B	S	U022S	U017S	015	A	S	062	070	072H	A	A	060
29	A	A	U018S	U014S	A	A	U029S	060	078	070H	A	060	060
30	029	U028S	U023F	U019F	U017F	B	U030S	052	065	067	069H	066	060
31	S	U047S	049	035	021	A	S	060	070	073	067H	A	060
Median	039	038	030	027	025	021	031	059	067	070	068	064	060
Count	20	19	21	20	18	9	26	29	29	29	24	23	060
UQ	042	042	034	035	028	025	037	062	070	073	069	070	060
LQ	032	031	022	019	021	018	031	055	065	066	063	059	060
QR	010	011	012	016	007	007	002	007	005	007	006	011	060

* Tabulation of 060 = 6.0 Mc.

ASPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

0	11	12	13	14	15	16	17	18	19	20	21	22	23
63	051	052	057	058H	065	074	080	102	064	059	040	-	A
63H	063	065	070	070H	066H	061H	065	076	078	070	058	U046S	033
61H	058	060	066	072	081	081	085	095	093	085	078	065	052
75	072	070	066H	062	066	073	081	090	094	068	056	050	042
C	C	064H	067H	070	076	082	086	086	084	081	076	086	056
72H	058	057	075	056	057	062	067	072	077	075	065	060	049
57	061H	061H	065H	075	085	090	085	081	081	082	075	070	061
73	075H	071	067	070H	075	070	080	085	088	064	061	052	045
60	A	060	069	080	088	C	080	082	078	080	070	052	040
68H	067H	069	075	075	C	C	092	092	090	U069S	046	031	A
63	065	070	069H	066H	065	069	071	075	077	063	059	055	050
56	054	055	056	057	062	072	087	093	075	057	042	033	030
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	075	S	086	075	070	055	049	043
C	C	C	C	071	079	086	088	085	090	R	058	A	A
62H	061H	057	055	058	068	B	J073S	076	081	068	065	055	048
66H	057	065	U067S	C	E	C	R	087	U091S	089	066	059	043
69H	060	A	064	067	075	080	079	090	090	075	063	065	051
68H	070	070	066	070	080	097	091	082	091	075	060	047	036
69	065	064	065	066	C	074	084	091	077	079	067	057	052
71	072H	070	076	080	080	087	097	098	096	103	085	060	048
69R	070	072	075	090	091	063	085	085H	083	069	065	U065F	054
69	070	070	079	080	082	A	A	087	U095S	093	064	048	S
75	080H	079	077	075	070	072	C	C	C	C	C	C	C
68	064	064	071	080	094	094	085	084	085	076	051	036	032
61	059	066	066	C	070	076	093	095	095	060	057	U042S	A
A	A	056	061	071	080	080	088	095	091	067	044	036	029
A	A	062H	072	085	085	083	095	120	U101S	061	045V	033	A
A	060	C	C	C	C	C	C	093	100	075	057	045	037
63H	066	069H	071	012	070H	072	080	077	081	068	061	S	S
67H	A	A	A	072	072	072	076	084	088	067	059	C	C
68	064	065	067	071	075	076	085	086	088	070	060	052	045
24	23	25	26	26	25	24	25	29	29	28	29	25	21
69	070	070	071	075	081	083	088	093	092	080	065	060	052
63	059	060	065	066	067	072	080	082	078	067	056	044	037
06	011	010	006	009	014	011	008	011	014	013	009	016	015

Characteristic: M(3000)F2

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in O.
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	U350F	S	F	A	A	A	U330S	345*	325	260	230	265	225
2	A	F	F	F	A	A	340	340	305	255	240H	240	230
3	U250F	F	F	F	S	A	305	300	265	240H	240H	230	225
4	260	290	310	315	320	370	325	325	305	270	230	225	220
5	270	U290F	U340F	U330F	F	350	340	330	285	250H	C	C	240
6	280	290	315	315	350	360	325	340	305	290	240H	260	240
7	275	285F	F	U310F	350	U350S	325	295	275	245H	265	230H	225
8	U280F	U320F	F	F	U350F	U350F	U315F	325	310	280	260	230H	225
9	305	U315F	F	F	U295F	335	340	295	300	U250S	240	A	225
10	U285S	265	U280F	F	A	A	A	320	295	245H	215H	240H	225
11	290	350	330	A	F	A	330	310	290	310	255	240	225
12	290	295	360	350	380	A	340	370	310	250H	250	240	225
13	300	F	U350F	340	A	A	320	350	305	C	C	C	225
14	C	C	C	C	C	C	C	C	C	C	C	C	225
15	320	330	335	315	320	355	360	330	290	260	C	C	225
16	A	A	U350F	F	F	F	340	315	285	230H	230H	245H	225
17	290	300	280	320	360	350	340	350	330	280	230H	260	225
18	290	340	315	310	290	F	330	335	305	270	215H	220	225
19	300	320	355	340	U370F	A	220	340	300	250H	230H	240	225
20	275H	U320S	365	A	A	S	310	335	290	240H	230	230	225
21	285	310	U335S	340	320	U340S	U340S	330	325	285	250	225H	225
22	235	270	285	335	375	A	320	325	285	255H	U190R	240	225
23	F	265F	S	315	275	A	U335S	315	290	250H	245	265	225
24	S	F	U370F	330	A	B	325	330	315	305	280	245	225
25	C	C	C	C	C	C	C	C	C	250H	255	230	225
26	A	S	C	U320S	350	A	350	340	290	235	250	240	225
27	A	S	S	380	350	A	340	350	320	250H	A	A	225
28	B	S	U330S	U330S	355	A	S	350	305	250H	A	A	225
29	A	A	U340S	U330S	A	A	U340S	350	310	240H	A	260	225
30	310	U310S	U285F	U310F	U290F	B	U350S	340	315	270	240	250	225
31	S	U290S	340	360	330	A	S	305	325	280	225H	A	225
Median	285	300	335	330	350	350	330	330	305	250	240	240	225
Count	20	19	20	20	13	9	26	29	29	29	24	23	225
UQ	300	320	350	340	355	355	340	340	310	270	250	250	225
LQ	275	290	310	315	320	340	325	315	290	245	230	230	225
QR	025	030	040	025	035	015	015	025	020	025	020	020	225

* Tabulation of 345 = factor of 3.45.

IONOSPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

10	11	12	13	14	15	16	17	18	19	20	21	22	23
230	265	235	230	220H	260	380	290	355	340	350	365	C	A
240H	240	250	250	230H	230H	230H	270	290	325	330	310	U280S	270
240H	230	265	240	250	265	275	295	310	305	305	330	320	300
230	225	245	220H	225	235	265	235	300	340	305	305	280	280
C	C	245H	235H	240	250	260	265	260	270	300	305	310	285
240H	260	250	240	235	245	240	250	280	300	290	270	305	300
265	230H	230H	230H	235	285	295	280	250	250	270	280	285	270
260	230H	215H	240	215H	260	260	280	290	320	320	315	310	310
240	A	235	240	245	255	C	255	245	250	290	325	305	285
215H	240H	250	240	240	C	C	320	330	345	U370S	345	285	A
255	240	245	225H	240H	245	240	265	280	335	315	320	300	295
250	240	240	245	260	250	270	300	325	330	345	330	340	320
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	255	S	310	310	320	320	310	320
C	C	C	C	270	280	290	300	300	320	R	360	A	A
230H	245H	260	240	260	265	B	S	290	325	320	320	315	300
230H	260	250	U260S	C	B	C	R	300	U310S	315	315	310	280
215H	220	A	225	250	250	275	285	305	315	325	330	320	320
230H	240	235	230	260	275	305	315	290	315	320	320	305	290
230	230	235	240	230	C	260	275	310	290	310	300	295	280
250	225H	255	260	255	265	280	290	310	305	310	310	310	280
U190R	240	235	235	260	275	265	245	265	315	295	295	U275F	280
245	265	260	270	275	275	A	A	295	U320S	340	320	290	S
280	245	255	250	225	270	260	C	C	C	C	C	C	C
255	230	250	260	260	290	320	325	310	330	340	330	300	290
250	240	250	250	C	250	270	300	320	310	310	300	U280S	A
A	A	250	245	205	290	300	315	320	335	345	320	305	290
A	A	235H	270	290	290	285	310	340	U330S	335	310	300	A
A	260	C	C	C	C	C	C	315	330	330	345	320	290
240	250	235	240	240	235	240	275	270	300	270	270	S	S
225H	A	A	A	245	240	240	270	305	310	330	320	C	C
240	240	245	240	245	260	265	285	300	315	320	320	305	290
24	23	25	26	26	25	24	24	29	29	28	29	25	21
250	250	250	250	260	275	280	300	310	330	330	330	310	300
230	230	235	235	235	245	255	270	280	305	305	305	285	280
020	020	015	015	025	030	025	030	030	025	025	025	025	020

Characteristic: h'F₂

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11
1	C	C	C	C	C	C	C	270*	300	440	500H	450
2	C	C	C	C	C	C	C	U270L	L	435	430H	435
3	C	C	C	C	C	C	C	L	L	435	L	500
4	C	C	C	C	C	C	C	L	290	350	400	410
5	C	C	C	C	C	C	C	U270A	310	370	C	C
6	C	C	C	C	C	C	C	L	325	340	430H	440
7	C	C	C	C	C	C	C	L	U360L	370H	440	480H
8	C	C	C	C	C	C	C	L	U300L	350	390	430H
9	C	C	C	C	C	C	C	320	U320L	390	E460A	A
10	C	C	C	C	C	C	C	L	L	390H	460H	430
11	C	C	C	C	C	C	C	L	L	L	405	430
12	C	C	C	C	C	C	C	240	U340L	360	440	500
13	C	C	C	C	C	C	C	L	U320L	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	L	L	380	C	C
16	C	C	C	C	C	C	C	L	L	E500S	L	440
17	C	C	C	C	C	C	C	L	290	360	430H	430
18	C	C	C	C	C	C	C	L	L	350	420H	500H
19	C	C	C	C	C	C	C	260	340	400H	400H	400
20	C	C	C	C	C	C	C	L	325	L	340	E470A
21	C	C	C	C	C	C	C	L	U280L	U330L	L	450H
22	C	C	C	C	C	C	C	L	U307L	347	L	405
23	C	C	C	C	C	C	C	E270S	L	380H	370	370
24	C	C	C	C	C	C	C	280	310	315	U350L	390H
25	C	C	C	C	C	C	C	C	C	L	380	450
26	C	C	C	C	C	C	C	L	U330L	L	430	E470A
27	C	C	C	C	C	C	C	L	L	U400L	A	A
28	C	C	C	C	C	C	C	280	U330L	365H	A	A
29	C	C	C	C	C	C	C	L	290	E400A	A	420
30	C	C	C	C	C	C	C	L	310	370	380	420
31	C	C	C	C	C	C	C	C	U290L	370	E440A	A
Median	-	-	-	-	-	-	-	270	310	370	430	435
Count	-	-	-	-	-	-	-	9	20	25	20	23
UQ	-	-	-	-	-	-	-	280	325	400	440	470
LQ	-	-	-	-	-	-	-	260	290	350	390	420
QR	-	-	-	-	-	-	-	020	035	050	050	050

* Tabulation of 270 = 270 km.

SPHERIC DATA
 o 25 Mc in 0.5 minute
 gust 1985

	11	12	13	14	15	16	17	18	19	20	21	22	23
H	450	530	550	500H	400	360	270	C	C	C	C	C	C
H	435	405	430	455H	420R	430H	330	U280L	C	C	C	C	C
	500	420	430	390	370	370	320	L	C	C	C	C	C
	410	400	460H	460	420	370	320	L	C	C	C	C	C
	C	410H	430H	420	380	E400A	U330L	L	C	C	C	C	C
R	440	460	520	500	480	415	L	L	C	C	C	C	C
	480H	490H	450H	405	340	310	L	L	C	C	C	C	C
	430H	450H	440	435H	380	360	U360L	C	C	C	C	C	C
A	A	480	420	390	E400A	C	U340L	C	C	C	C	C	C
H	430	400	410	390	C	C	295	260	C	C	C	C	C
	430	405	430	440	415	390	340	L	C	C	C	C	C
	500	500	500	450	420	360	315	C	C	C	C	C	C
	C	C	C	C	C	C	C	C	C	C	C	C	C
	C	C	C	C	C	380	300	265	C	C	C	C	C
	C	C	C	375	360	320	U300L	U280L	C	C	C	C	C
	440	460	520	450	380	B	L	C	C	C	C	C	C
H	430	415	390	C	B	C	280	U290L	C	C	C	C	C
H	500H	A	E600A	405	385	350	U320L	C	C	C	C	C	C
H	400	420	430	370	350	305	305	C	C	C	C	C	C
	E470A	E550A	440	410	C	360	L	C	C	C	C	C	C
	450H	400	390	370	340	U360L	310	C	C	C	C	C	C
	405	415	412	355	300	350	L	C	C	C	C	C	C
	370	390	360	380	375	A	A	L	C	C	C	C	C
L	390H	400	420	390	370	U350L	C	C	C	C	C	C	C
	450	420	400	400	320	290	280	C	C	C	C	C	C
	E470A	420	420	C	350	355	U300L	C	C	C	C	C	C
	A	E500A	E440A	380	340	325	U300L	C	C	C	C	C	C
	A	430H	380	340	340	330	320	C	C	C	C	C	C
	420	C	C	C	C	C	C	C	C	C	C	C	C
	420	415	420	400	390	U400L	320	C	C	C	C	C	C
A	A	A	A	410	400	L	U300L	C	C	C	C	C	C
	435	420	430	400	380	360	310	280	-	-	-	-	-
	23	25	26	26	25	23	22	5	-	-	-	-	-
	470	460	450	440	400	380	320	290	-	-	-	-	-
	420	405	410	380	340	330	300	265	-	-	-	-	-
	050	055	040	060	060	050	020	025	-	-	-	-	-

Characteristic: h'F

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.5
August 1965

Observed at:
Bangkok, Thailand
lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	290H	250H	300*	A	A	A	U300S	230	210	200	E220A	E200A	E210A
2	A	280H	280	U270S	A	A	360	220	210	200	220	200	E200A
3	U440S	350	310	280	U200S	A	E290A	E240A	E300A	A	E220A	200	200
4	360	320	300	E300A	270	E250S	300	230	210	200	210	200	200
5	360	300	255	260	250	260	280	A	E220A	200	C	C	E200A
6	340	320	290	265	225	225	E265S	E240A	225	200	E250A	200	200
7	340	340H	360H	310H	240H	E300A	E300A	E240A	230	E250A	200	E200A	200
8	325	275	260	250	210	270H	300	240	220	225	200	E200A	E210A
9	310	330	300	300	E350A	E280S	270	A	E230A	220	A	A	200
10	400	390	340H	U250S	A	A	A	E270A	220	190	E190A	A	A
11	E400A	285	E300A	A	U270S	A	300	230	E210A	200	200	190	E200A
12	340	300	230	230	215	A	250	E225A	E200A	A	E230A	A	100
13	350	U330S	250	230	A	A	E280S	E240A	E270A	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C
15	270	250	250	250	250	230	255	220	E200S	200	C	C	C
16	A	A	E250A	250H	280H	250H	E300S	230	210	E280A	200	S	E200A
17	300	315	300	260	210	E250S	E250S	230	E220A	200	200	200	200
18	330	250	270	290	300	U250S	E290S	250	215	E220S	230	200	200
19	260	270	270	260	240	A	E300S	A	E300A	E220A	200	210	100
20	400S	280	215	A	A	U270S	E310S	240	230	E240A	E220A	A	A
21	330	U270S	220	230	230	U280S	E300S	E240S	E230S	E290A	E250A	E250A	E200A
22	E395S	355	290	250	217	A	E295S	E265S	E215S	E200S	E215S	E195S	100
23	310	318	E248E	237	E375A	A	E210S	L	E240A	230	220	A	E200A
24	U350S	310	240	260	A	B	E300S	A	E280A	200	230	220	200
25	C	C	C	C	C	C	C	C	C	200	200	E200S	E200S
26	A	340	U320S	300	240	A	E300S	250	210	E240A	E240A	A	A
27	A	U400S	U300S	230	240	A	E300S	E240S	E200S	200	A	A	A
28	B	E400S	305	280	260	A	E300S	E260A	220	210	A	A	200
29	A	A	E350A	U350A	A	A	E320S	E240S	E220S	A	A	A	A
30	300	U300S	300	310	U350S	B	E250S	230	E220A	200	220	E200S	E200A
31	U320S	300	230	210	240	A	E300S	250	E210A	A	A	A	A
Median	340	310	290	260	240	260	300	240	220	200	220	200	200
Count	23	27	29	26	22	12	28	24	23	25	22	16	10
UQ	360	340	300	290	270	280	300	250	230	225	230	200	200
LQ	310	280	250	250	225	250	265	230	210	200	200	200	200
QR	050	060	050	040	045	030	035	020	020	025	030	000	000

* Tabulation of 300 = 300 km.

OSPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

0	11	12	13	14	15	16	17	18	19	20	21	22	23
220A	E200A	E210A	180	170	200	210	210	U240S	230	210	240	B	A
220	200	E200A	200	200	200	190	E200S	E240A	225	240	275	330	400
220A	200	200	A	A	200	E240A	210	230	260	280	240	240	E300A
210	200	200	200	200	200	210	E250A	E250A	280	240	260	E300S	320
C	C	E200A	200	E200A	A	A	220	230	280	285	260	270	303
E50A	200	200	A	E230A	200	200	E220A	230	255	275	E300S	E280S	E290S
200	E200A	200	E240A	E250A	E220A	205	210	E270A	290	300	290	300	315
200	E200A	E210S	205	220	205	200	E220S	E240S	240	210	240	270	290
A	A	200	200	210	A	C	210	E240A	300	265	240	260	340
190A	A	A	200	E240A	C	C	215	245	220	200	240	380	A
200	190	E200S	E200S	200	200	E200B	215	E240A	220	230	350	270	290
230A	A	190	210	180	180	200	220	E240S	230	220	240	250	E280S
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	A	A	E250S	230	240	230	270	290
C	C	C	C	U200S	200	200	E200A	E220S	240	215	210	A	A
00	S	E200S	S	E200S	E200S	B	E300A	230	220	210	230	250	E280S
200	200	A	A	C	B	C	E220S	260	270	250	250	280	330
230	200	A	A	A	E250A	E250A	240	260	250	230	240	250	270
200	210	190	200	200	E250A	200	E230S	E270S	255	240	250	290	E340S
220A	A	A	200	210	C	210	E230S	260	250	240	250	280	330
250A	E250A	E210S	215	220	200	220	230	E270S	E265S	270	255	260	E325S
215S	E195S	195	E220S	205	195	200	E208S	E245S	E251S	255	265H	U280S	U305S
220	A	E210A	200	A	A	A	A	E210A	U260S	235	240	320	340
230	220	220	A	210	E200A	200	C	C	C	C	C	C	C
200	E200S	E200A	E200S	E230S	210	E240A	E250A	260	240	240	220	E300S	E350S
240A	A	200	200	C	E220S	220	200	E260S	240	260	300	340	A
A	A	A	A	E230A	E240A	210	OS	250	240	215	240	E300S	E350S
A	A	220	E220A	A	A	E250A	E250A	260	220	220	290	E350A	A
A	A	C	C	C	C	C	C	E260S	240	240	240	260	300
220	E200S	E200S	E200A	215	200	220	220	E260S	260	280	300	U280S	E340S
A	A	A	A	E250A	200	E310A	E220S	260	250	230	245	C	C
220	200	200	210	210	200	210	220	250	250	240	245	280	315
22	16	21	19	22	21	22	26	29	29	29	29	26	23
230	200	210	210	230	210	220	230	260	260	260	265	300	340
200	200	200	200	200	200	200	210	240	230	220	240	260	290
030	000	010	010	030	010	020	020	020	030	040	025	040	050

Characteristic: foF1

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11
1	C	C	C	C	C	C	C	L	L	047*	044	044
2	C	C	C	C	C	C	C	L	L	043	043	045
3	C	C	C	C	C	C	C	L	L	A	044	045
4	C	C	C	C	C	C	C	L	L	043	045	046
5	C	C	C	C	C	C	C	A	043	044	C	C
6	C	C	C	C	C	C	C	L	L	U044L	045	045
7	C	C	C	C	C	C	C	L	U042L	043	045	046
8	C	C	C	C	C	C	C	L	L	U044L	044	045
9	C	C	C	C	C	C	C	A	L	044	A	A
10	C	C	C	C	C	C	C	L	L	044	046	A
11	C	C	C	C	C	C	C	L	L	U044L	045	045
12	C	C	C	C	C	C	C	L	L	A	044	A
13	C	C	C	C	C	C	C	L	L	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	L	L	043	C	C
16	C	C	C	C	C	C	C	L	L	U043R	044	S
17	C	C	C	C	C	C	C	L	L	043	044	045
18	C	C	C	C	C	C	C	L	L	042	045	044
19	C	C	C	C	C	C	C	A	L	043	044	044
20	C	C	C	C	C	C	C	L	L	U044L	045	A
21	C	C	C	C	C	C	C	L	L	L	U043L	044
22	C	C	C	C	C	C	C	L	045	044H	045	044
23	C	C	C	C	C	C	C	L	L	044	044	A
24	C	C	C	C	C	C	C	A	L	U043L	U045L	045
25	C	C	C	C	C	C	C	C	C	U042L	044	045
26	C	C	C	C	C	C	C	L	L	043	044	A
27	C	C	C	C	C	C	C	L	L	U044L	A	A
28	C	C	C	C	C	C	C	L	L	044	A	A
29	C	C	C	C	C	C	C	L	L	A	A	A
30	C	C	C	C	C	C	C	L	L	044	043	045
31	C	C	C	C	C	C	C	C	L	A	A	A
Median	-	-	-	-	-	-	-	-	043	044	044	045
Count	-	-	-	-	-	-	-	-	3	24	22	16
UQ	-	-	-	-	-	-	-	-	044	044	045	045
LQ	-	-	-	-	-	-	-	-	042	043	044	044
QR	-	-	-	-	-	-	-	-	002	001	001	001

* Tabulation of 047 = 4.7 Mc.

OSPHERIC DATA
 to 25 Mc in 0.5 minute
 gust 1965

0	11	12	13	14	15	16	17	18	19	20	21	22	23
4	044	044	044	043	042	042	L	C	C	C	C	C	C
3	045	045	045	044	043	042	L	L	C	C	C	C	C
1	045	045	A	A	043	043	039	L	C	C	C	C	C
5	046	045	046	045	044	U043L	L	L	C	C	C	C	C
	C	045	045	045	A	A	L	L	C	C	C	C	C
5	045	045	A	045	043	043	L	L	C	C	C	C	C
5	046	045	045	044	043	042	L	L	C	C	C	C	C
4	045	045	045	045	043	042	L	C	C	C	C	C	C
	A	045	045	044	A	C	L	C	C	C	C	C	C
6	A	A	044	044	C	C	U042L	L	C	C	C	C	C
5	045	046	045	045	043	042	L	L	C	C	C	C	C
4	A	045	045	044	043	043	L	C	C	C	C	C	C
	C	C	C	C	C	C	C	C	C	C	C	C	C
	C	C	C	C	C	A	A	L	C	C	C	C	C
4	S	U045S	S	045	044	041	L	L	C	C	C	C	C
4	045	A	A	C	B	C	L	L	C	C	C	C	C
5	044	A	A	A	042	L	L	C	C	C	C	C	C
4	044	045	045	044	044	L	L	C	C	C	C	C	C
5	A	A	045	044	C	U042L	L	C	C	C	C	C	C
3L	044	045	044	044	044	L	L	C	C	C	C	C	C
5	044	045	045	044	042	U043L	L	C	C	C	C	C	C
4	A	U045R	045	A	A	A	A	L	C	C	C	C	C
5L	045	045	A	044	043	U040L	C	C	C	C	C	C	C
4	045	044	044	044	042	L	L	C	C	C	C	C	C
4	A	045	045	C	043	042	L	C	C	C	C	C	C
	A	A	A	044	043	U042L	L	C	C	C	C	C	C
	A	045S	044	A	A	U042L	L	C	C	C	C	C	C
	A	C	C	C	C	C	C	C	C	C	C	C	C
3	045	044	044	043	043	U042L	L	C	C	C	C	C	C
	A	A	A	044	045	L	L	C	C	C	C	C	C
4	045	045	045	044	043	042	-	-	-	-	-	-	-
2	16	21	19	22	21	17	2	-	-	-	-	-	-
5	045	045	045	045	043	043	-	-	-	-	-	-	-
4	044	045	044	044	042	042	-	-	-	-	-	-	-
01	001	000	001	001	001	001	-	-	-	-	-	-	-

2

Character stic: M(3000)F1

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.5
August 1965

Observed at:
Bangkok Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	C	C	C	C	C	C	C	L	L	380*	400	420	440
2	C	C	C	C	C	C	C	L	L	365	400	410	430
3	C	C	C	C	C	C	C	L	L	A	375	400	410
4	C	C	C	C	C	C	C	L	L	380	395	410	420
5	C	C	C	C	C	C	C	A	285	385	C	C	430
6	C	C	C	C	C	C	C	L	L	U400L	390	425	430
7	C	C	C	C	C	C	C	L	U365L	370	390	395	410
8	C	C	C	C	C	C	C	L	L	U770L	410	410	420
9	C	C	C	C	C	C	C	A	L	370	A	A	430
10	C	C	C	C	C	C	C	L	L	375	380	A	440
11	C	C	C	C	C	C	C	L	L	U395L	405	420	430
12	C	C	C	C	C	C	C	L	L	A	390	A	440
13	C	C	C	C	C	C	C	L	L	C	C	C	450
14	C	C	C	C	C	C	C	C	C	C	C	C	460
15	C	C	C	C	C	C	C	L	L	365	C	C	470
16	C	C	C	C	C	C	C	L	L	U370R	425	8	480
17	C	C	C	C	C	C	C	L	L	395	400	420	490
18	C	C	C	C	C	C	C	L	L	395	375	400	500
19	C	C	C	C	C	C	C	A	L	375	390	410	510
20	C	C	C	C	C	C	C	L	L	U380L	380	A	520
21	C	C	C	C	C	C	C	L	L	I	U375L	390	530
22	C	C	C	C	C	C	C	L	265	355H	310	395	540
23	C	C	C	C	C	C	C	L	L	360	390	A	550
24	C	C	C	C	C	C	C	A	L	U375L	U370L	390	560
25	C	C	C	C	C	C	C	C	C	U385L	410	400	570
26	C	C	C	C	C	C	C	L	L	390	370	A	580
27	C	C	C	C	C	C	C	L	L	U380L	A	A	590
28	C	C	C	C	C	C	C	L	L	320	A	A	600
29	C	C	C	C	C	C	C	L	L	A	A	A	610
30	C	C	C	C	C	C	C	L	L	390	410	405	620
31	C	C	C	C	C	C	C	C	L	A	A	A	630
Median	-	-	-	-	-	-	-	-	365	380	390	405	640
Count	-	-	-	-	-	-	-	-	3	24	22	15	650
UQ	-	-	-	-	-	-	-	-	355	390	400	410	660
LQ	-	-	-	-	-	-	-	-	355	370	375	395	670
QR	-	-	-	-	-	-	-	-	010	020	025	015	680

* Tabulation of 360 = factor of 3.6.

SPHERIC F
o 25 Mc in 0.5
ust 1965

	11	12	13	14	15	16	17	18	19	20	21	22	23
	420	430	410	390	410	390	L	C	C	C	C	C	C
	410	420	405	415	420	400	L	L	C	C	C	C	C
	400	400	A	A	395	365	360	L	C	C	C	C	C
	410	425	400	410	395	U375L	L	L	C	C	C	C	C
	J	410	410	420	A	A	L	L	C	C	C	C	C
	425	420	A	395	410	370	L	L	C	C	C	C	C
	395	410	395	385	410	365	L	L	C	C	C	C	C
	410	400	410	400	405	375	L	C	C	C	C	C	C
	A	410	410	400	A	C	L	C	C	C	C	C	C
	A	A	410	395	C	C	U350L	L	C	C	C	C	C
	420	410	410	410	405	390	L	L	C	C	C	C	C
	A	430	420	420	405	370	L	C	C	C	C	C	C
	C	C	C	C	C	C	C	C	C	C	C	C	C
	C	C	C	C	C	A	A	L	C	C	C	C	C
	C	C	C	410	410	400	L	L	C	C	C	C	C
	S	S	S	420	405	B	L	C	C	C	C	C	C
	420	A	A	C	B	C	L	L	C	C	C	C	C
	400	A	A	A	390	L	L	C	C	C	C	C	C
	410	400	400	415	375	L	L	C	C	C	C	C	C
	A	A	420	390	C	U360L	L	C	C	C	C	C	C
	390	400	410	390	390	L	L	C	C	C	C	C	C
	395	395	400	395	425	U365L	L	C	C	C	C	C	C
	A	U390R	390	A	A	A	A	L	C	C	C	C	C
	390	405	A	420	405	U390L	C	C	C	C	C	C	C
	400	420	410	390	400	L	L	C	C	C	C	C	C
	A	410	410	C	380	360	L	C	C	C	C	C	C
	A	A	A	400	380	U380L	L	C	C	C	C	C	C
	A	100S	400	A	A	U390L	L	C	C	C	C	C	C
	A	C	C	C	C	C	C	C	C	C	C	C	C
	405	400	430	415	390	U380L	L	C	C	C	C	C	C
	A	A	A	380	395	L	L	C	C	C	C	C	C
	405	410	410	400	405	380	-	-	-	-	-	-	-
	6	20	19	22	21	17	2	-	-	-	-	-	-
	410	420	410	415	410	390	-	-	-	-	-	-	-
	395	400	400	390	390	365	-	-	-	-	-	-	-
	015	020	010	025	020	025	-	-	-	-	-	-	-

2

Characteristic: foE

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.75° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	C	C	C	C	C	C	C	S	S	S	S	S	S
2	C	C	C	C	C	C	C	S	S	S	S	S	S
3	C	C	C	C	C	C	C	S	S	S	S	S	S
4	C	C	C	C	C	C	C	S	S	S	S	S	S
5	C	C	C	C	C	C	C	S	S	S	C	C	C
6	C	C	C	C	C	C	C	S	S	S	S	S	S
7	C	C	C	C	C	C	C	S	S	S	S	S	S
8	C	C	C	C	C	C	C	S	S	D300R	B	S	S
9	C	C	C	C	C	C	C	S	S	S	S	A	S
10	C	C	C	C	C	C	C	S	S	D300A	S	S	S
11	C	C	C	C	C	C	C	S	S	B	B	S	S
12	C	C	C	C	C	C	C	S	S	S	S	S	S
13	C	C	C	C	C	C	C	S	S	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	S	S	S	C	C	C
16	C	C	C	C	C	C	C	S	S	S	D340R	S	S
17	C	C	C	C	C	C	C	S	S	S	S	C	C
18	C	C	C	C	C	C	C	S	S	S	S	S	S
19	C	C	C	C	C	C	C	S	S	S	S	S	S
20	C	C	C	C	C	C	C	C	S	S	S	S	S
21	C	C	C	C	C	C	C	S	S	S	S	S	S
22	C	C	C	C	C	C	C	S	A	A	A	U350R	U3
23	C	C	C	C	C	C	C	S	C	S	S	S	S
24	C	C	C	C	C	C	C	S	S	S	S	S	S
25	C	C	C	C	C	C	C	C	C	S	S	S	S
26	C	C	C	C	C	C	C	S	S	S	S	S	S
27	C	C	C	C	C	C	C	S	S	S	A	A	A
28	C	C	C	C	C	C	C	S	S	S	S	S	S
29	C	C	C	C	C	C	C	S	S	S	C	S	S
30	C	C	C	C	C	C	C	S	S	S	S	S	S
31	C	C	C	C	C	C	C	-	S	S	S	A	A
Median	-	-	-	-	-	-	-	-	-	-	-	-	-
Cor	-	-	-	-	-	-	-	-	-	2	1	1	-
UQ	-	-	-	-	-	-	-	-	-	-	-	-	-
LQ	-	-	-	-	-	-	-	-	-	-	-	-	-
QR	-	-	-	-	-	-	-	-	-	-	-	-	-

* Tabulation of 330 = 3.3 Mc.

IONOSPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

10	11	12	13	14	15	16	17	18	19	20	21	22	23
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	S	C	C	C	C	C
S	S	S	S	S	S	S	S	S	C	C	C	C	C
S	S	S	S	S	330*	S	S	S	C	C	C	C	C
C	C	S	S	D350A	D300A	D300A	S	S	C	C	C	C	C
S	S	S	S	S	S	C	S	S	C	C	C	C	C
S	S	S	S	S	S	S	S	S	S	C	C	C	C
B	S	S	S	D340R	S	S	S	C	C	C	C	C	C
S	A	C	S	S	D320A	C	S	C	C	C	C	C	C
S	S	S	S	S	C	C	S	S	C	C	C	C	C
B	S	S	S	S	D320A	S	S	S	C	C	C	C	C
S	S	D360A	S	S	330	300	S	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	S	S	S	S	C	C	C	C	C
D340R	S	S	S	S	S	B	S	C	C	C	C	C	C
S	C	S	S	C	B	C	S	S	C	C	C	C	C
S	S	S	S	D350A	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	C	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
A	U350R	U260R	S	350	U325C	U315S	S	C	C	C	C	C	C
S	S	S	S	S	S	A	A	S	C	C	C	C	C
S	S	S	S	S	S	S	C	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
A	A	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
C	S	C	C	C	C	C	C	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	A	A	A	S	S	S	S	C	C	C	C	C	C
-	-	-	-	350	322	300	-	-	-	-	-	-	-
1	1	2	-	4	6	3	-	-	-	-	-	-	-
-	-	-	-	350	330	307	-	-	-	-	-	-	-
-	-	-	-	345	320	300	-	-	-	-	-	-	-
-	-	-	-	005	010	007	-	-	-	-	-	-	-

2

Characteristic: h'F

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.5
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	C	C	C	C	C	C	C	S	S	S	S	S	S
2	C	C	C	C	C	C	C	S	S	S	S	S	S
3	C	C	C	C	C	C	C	S	S	S	S	S	S
4	C	C	C	C	C	C	C	S	S	S	S	S	S
5	C	C	C	C	C	C	C	S	S	S	C	C	S
6	C	C	C	C	C	C	C	S	S	S	S	S	S
7	C	C	C	C	C	C	C	S	S	S	S	S	S
8	C	C	C	C	C	C	C	S	S	110	B	S	S
9	C	C	C	C	C	C	C	S	S	S	S	A	S
10	C	C	C	C	C	C	C	S	S	110	S	S	S
11	C	C	C	C	C	C	C	S	S	B	B	S	S
12	C	C	C	C	C	C	C	S	S	S	S	S	1
13	C	C	C	C	C	C	C	S	S	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	S	S	S	C	C	C
16	C	C	C	C	C	C	C	S	S	S	100	S	C
17	C	C	C	C	C	C	C	S	S	S	S	C	S
18	C	C	C	C	C	C	C	S	S	S	S	S	S
19	C	C	C	C	C	C	C	S	S	S	S	S	S
20	C	C	C	C	C	C	C	C	S	S	S	S	S
21	C	C	C	C	C	C	C	S	S	S	S	S	S
22	C	C	C	C	C	C	C	S	S	S	S	U120S	1
23	C	C	C	C	C	C	C	S	C	S	S	S	S
24	C	C	C	C	C	C	C	S	S	S	S	S	S
25	C	C	C	C	C	C	C	C	C	S	S	S	S
26	C	C	C	C	C	C	C	S	S	S	S	S	S
27	C	C	C	C	C	C	C	S	S	S	A	A	S
28	C	C	C	C	C	C	C	S	S	S	S	S	S
29	C	C	C	C	C	C	C	S	S	S	C	S	S
30	C	C	C	C	C	C	C	S	S	S	S	S	S
31	C	C	C	C	C	C	C	C	S	S	S	A	S
Median	-	-	-	-	-	-	-	-	-	-	-	-	-
Count	-	-	-	-	-	-	-	-	-	2	1	1	-
UQ	-	-	-	-	-	-	-	-	-	-	-	-	-
LQ	-	-	-	-	-	-	-	-	-	-	-	-	-
QR	-	-	-	-	-	-	-	-	-	-	-	-	-

* Tabulation of 120 = 120 km.

OSPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

0	11	12	13	14	15	16	17	18	19	20	21	22	23
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	S	C	C	C	C	C
S	S	S	S	S	S	S	S	S	C	C	C	C	C
S	S	S	S	S	120*	S	S	S	C	C	C	C	C
C	C	S	S	100	110	110	S	S	C	C	C	C	C
S	S	S	S	S	S	C	S	S	C	C	C	C	C
S	S	S	S	S	S	S	S	S	C	C	C	C	C
B	S	S	S	130	S	S	S	C	C	C	C	C	C
S	A	S	S	S	115	C	S	C	C	C	C	C	C
S	S	S	S	S	C	C	S	S	C	C	C	C	C
B	S	S	S	S	110	S	S	S	C	C	C	C	C
S	S	110	S	S	110	110	S	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	S	S	S	C	C	C	C	C
C	C	C	C	S	S	S	S	S	C	C	C	C	C
00	S	S	S	S	S	B	S	C	C	C	C	C	C
S	C	S	S	C	B	C	S	S	C	C	C	C	C
S	S	S	S	120	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	S	C	C	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	U120S	110	S	U120S	107	112	S	C	C	C	C	C	C
S	S	S	S	S	S	A	A	S	C	C	C	C	C
S	S	S	S	S	S	S	C	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	C	S	S	S	C	C	C	C	C	C
A	A	S	S	S	S	S	S	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
C	S	C	C	C	C	C	C	C	C	C	C	C	C
S	S	S	S	S	S	S	S	C	C	C	C	C	C
S	A	A	A	S	S	S	S	C	C	C	C	C	C
-	-	-	-	120	110	110	-	-	-	-	-	-	-
1	1	2	-	4	6	3	-	-	-	-	-	-	-
-	-	-	-	125	115	111	-	-	-	-	-	-	-
-	-	-	-	110	110	110	-	-	-	-	-	-	-
-	-	-	-	015	005	001	-	-	-	-	-	-	-

Characteristic: fbE

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.5
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	S	018*	017	A	A	A	C	026M	031	035	040	040M	040
2	A	C	C	C	A	A	C	C	029	034	038	039	040
3	S	S	S	E	C	A	022	027M	040M	050M	041M	036M	040
4	S	S	S	014M	C	019	C	024	029	032M	038M	035M	040
5	S	015M	M	E	E	C	M	040M	033M	035	C	C	040
6	S	S	S	M	S	C	S	027	033	035M	042M	039M	040
7	S	S	S	M	M	C	025	028M	032M	040M	037	040M	040
8	C	M	M	M	M	S	C	027	031	037	B	040	040
9	S	M	M	M	C	M	C	045M	033M	036M	050M	A	040
10	C	C	M	M	A	A	A	031	S	034	036	049M	040
11	C	M	021M	A	018	A	C	S	030M	B	B	S	040
12	B	C	C	C	015	A	S	029M	032M	045M	041	045M	040
13	C	S	013	C	A	A	S	031	038	C	C	C	040
14	C	C	C	C	C	C	C	C	C	C	C	C	040
15	S	S	S	C	C	M	M	026	S	S	C	C	040
16	A	A	018M	013M	C	M	S	024	030	041M	G	S	040
17	S	M	C	C	C	C	S	027	033	036	S	040M	040
18	S	M	C	013M	014M	M	S	032M	031	037M	038M	039M	040
19	S	022M	M	016M	013M	M	S	035M	039M	037	035	032R	040
20	M	S	M	A	A	M	S	C	034	038M	037	055M	040
21	S	S	E	M	M	S	S	S	031	040M	041	041	040
22	S	M	S	C	M	C	S	026M	M	034M	036M	036M	040
23	S	014M	C	012M	011	A	027M	035M	031M	035	039	045	040
24	M	M	M	M	A	B	S	036M	037M	S	039	S	040
25	C	C	C	C	C	C	C	C	C	M	S	S	040
26	A	S	M	M	M	A	M	032M	030M	039M	042	050	040
27	A	M	M	C	017M	A	S	S	S	035M	A	A	040
28	B	C	M	M	012M	A	S	036M	M	S	A	A	040
29	A	A	M	C	A	A	M	S	034M	053M	A	048M	040
30	S	S	M	E	M	B	S	C	031M	034M	M	S	040
31	S	S	E	E	M	A	S	M	033M	045M	048M	A	040
Median	-	017	018	013	014	-	025	029	032	037	039	040	040
Count	-	4	4	5	7	1	3	21	24	24	18	18	040
UQ	-	020	020	015	017	-	026	035	033	040	041	045	040
LQ	-	015	015	013	012	-	024	027	031	035	037	039	040
QR	-	005	005	002	005	-	002	008	002	005	004	006	040

* Tabulation of 018 = 1.8 Mc.

OSPHERIC DATA
 o 25 Mc in 0.5 minute
 ugust 1965

0	11	12	13	14	15	16	17	18	19	20	21	22	23
0	040M	040M	038	037	034	033	028	S	S	S	S	B	A
8	039	042	040	038	038	031M	S	027	025	C	C	S	S
1M	036M	040M	044M	049M	036	037M	030M	022	026	C	S	M	030M
8M	035M	040M	040	035M	G	033M	035M	029M	029	S	S	S	C
	C	040	038	037	045	062	031	022M	033	028	C	S	S
2M	039M	040M	045M	041M	036	032	028M	M	S	S	S	S	S
7	040M	039M	042M	042	040M	034M	031	030	032	B	M	B	M
	040	S	038	G	035M	S	G	S	S	S	S	S	S
0M	A	039M	039M	038	063M	C	030M	025M	031	035	023M	C	C
6	049M	050M	038M	042M	C	C	030	035M	027	M	S	026M	A
	S	S	S	S	035	S	029M	027M	023	S	B	S	S
1	045M	039	041	035	G	C	028M	S	S	S	E	S	S
	C	C	C	C	C	C	C	C	C	C	C	C	C
	C	C	C	C	C	045M	050M	027	S	S	S	C	S
	C	C	C	038M	040	031	027	S	S		S	A	A
	S	S	S	S	S	B	038M	M	B	S	S	S	S
	040M	045M	050M	C	B	C	S	030M	C	M	S	M	M
8M	039M	A	061M	049M	040M	035	M	029M	030M	S	S		S
5	D032R	S	040M	S	040M	S	S	S	S	S	030M	S	S
37	055M	059M	036	D033R	C	C	S	S	S	S	S	S	S
11	011	S	S	S	S	S	S	C	S	S	S	S	S
36M	006M	027M	S	036	C	034M	029	S	M	S	S	S	S
39	005	040M	038M	D037R	060M	A	A	034	040	M	M	030	M
39		040	045	039M	040	036M	C	C	C	C	C	C	C
S		040M	S	S	035	035M	033M	M	029M	M	C	S	M
12	050	S	S	C	S	032M	M	S	S	M	M	S	A
A	A	050M	050M	034	039M	032M	S	S	031	S	S	S	S
A	A	S	040	047M	050	037	035M	C	S	S	S	027M	A
A	040M	C	C	C	C	C	C	S	030M	030M	S	S	S
M	S	S	040	040	S	035	030M	M	S	S	S	S	S
48M	A	A	A	044M	M	042	C	032	036M	031M	S	C	C
39	040	040	040	038	040	035	030	029	030	031	-	027	-
18	18	17	20	20	17	18	17	13	14	4	2	3	1
41	045	044	045	042	042	037	034	031	032	035	-	029	-
37	039	040	038	037	035	032	028	026	027	029	-	026	-
04	006	004	007	005	007	005	006	005	005	004	-	003	-

2

Characteristic: foE_s

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11
1	S	021*	031	048M	055M	048M	036	054M	033	050	055	078M
2	031	018	022	024	028	026	036	034	040	040	038	050
3	S	S	S	E	017	019	027	062M	098M	106M	082M	070M
4	S	S	S	024M	020	026	036	033	036	050M	055M	055M
5	S	032M	019M	E	E	036	036M	058M	050M	042	C	C
6	S	S	S	019M	S	016	S	027	033	047M	072M	070M
7	S	S	S	032M	027M	021	038	041M	041M	075M	037	080M
8	039	031M	032M	021M	035M	S	028	027	032	042	B	060
9	S	090M	048M	035M	032	036M	036	076M	104M	100M	084M	110M
10	026	018	025M	023M	034M	090M	047M	031	S	034	036	090M
11	026	030M	044M	035M	023	035	029	S	060M	B	B	S
12	B	050	023	025	026	033M	S	045M	045M	070M	041	090M
13	042	S	026	017	022	029	S	040	040	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C
15	S	S	S	025	018	025M	045M	032	S	S	C	C
16	040M	032	050M	030M	019	045M	S	033	039	067M	G	S
17	S	030M	023	025	032	020	S	027	033	036	S	070M
18	S	030M	024	030M	032M	045M	S	047M	033	050M	066M	061M
19	S	070M	060M	065M	030M	050M	S	045M	047M	037	040	D032R
20	050M	S	045M	032M	042M	040M	S	035	035	057M	044	065M
21	S	S	E	023M	030M	S	S	S	034	062	041	041
22	S	023M	S	021	023M	034	S	033M	064M	066M	050M	051M
23	S	048M	037	051M	064	076M	048M	072M	075M	045	039	050
24	050M	050M	030M	030M	025M	B	S	067M	070M	S	042	S
25	C	C	C	C	C	C	C	C	C	050M	S	S
26	050M	S	032M	027M	030M	044M	060M	070M	070M	053M	042	057
27	033M	047M	033M	024	035M	035M	S	S	S	050M	096M	090M
28	B	026	025M	025M	032M	042M	S	050M	040M	S	050	069M
29	045M	055M	045M	025	050M	070M	050M	S	075M	120M	085M	090M
30	S	S	030M	E	020M	B	S	036	060M	056M	060M	S
31	S	S	E	E	025M	044M	S	055M	050M	080M	097M	083
Median	040	032	031	025	030	036	037	041	043	050	050	069
Count	11	18	21	25	27	25	14	25	26	25	22	22
UQ	050	050	045	032	034	045	047	057	064	069	072	083
LQ	031	026	025	024	023	026	036	033	035	043	041	055
QR	019	024	020	008	011	019	011	024	029	026	031	028

* Tabulation of 021 = 2.1 Mc.

IONOSPHERIC DATA
 to 25 Mc in 0.5 minute
 August 1965

10	11	12	13	14	15	16	17	18	19	20	21	22	23
055	078M	090M	053	048	040	042	031	S	S	S	S	B	050M
038	050	050	045	C	043	050M	S	032	028	030	025	S	S
082M	070M	055M	080M	082M	044	075M	057M	028	026	026	S	042M	050M
055M	055M	050M	040	045M	G	060M	060M	070M	037	S	S	S	030
C	C	040	038	037	053	070	031	047M	044	034	028	S	S
072M	070M	070M	090M	073M	036	037	055M	046M	S	S	S	S	S
037	080M	085M	085M	055	075M	050M	040	036	C32	B	050M	B	060M
B	060	S	041	G	050M	S	G	S	S	S	S	S	S
084M	110M	090M	070M	060	072M	C	036M	038M	036	041	041M	C	026
036	090M	050M	080M	070M	C	C	041	045M	031	036M	S	047M	066
B	S	S	S	S	036	S	045M	040M	037	S	B	S	S
011	090M	039	041	035	G	050	050M	S	S	S	S	S	S
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	066M	070M	030	S	S	S	025	S
C	C	C	C	070M	040	033	027	S	S	S	S	045M	042
G	S	S	S	S	S	B	063M	043M	S	S	S	S	S
S	070M	080M	060M	C	B	C	S	045M	042	040M	S	048M	060M
066M	061M	080M	076M	083M	050M	035	033M	042M	040M	S	S	S	S
040	D032R	S	050M	S	050M	S	S	S	S	S	044M	S	S
044	065M	066M	036	D033R	C	033	S	S	S	S	S	S	S
041	041	S	S	S	S	S	S	033	S	S	S	S	S
050M	051M	024M	S	040	038	041M	036	U048S	048M	S	S	S	S
039	050	050M	050M	037D	070M	130M	098M	044	047	047M	048M	045	050M
042	S	040	045	050M	043	049M	C	C	C	C	C	C	C
S	S	050M	S	S	040	050M	050M	047M	047M	044M	035	S	050M
042	057	S	S	C	S	045M	041M	S	S	040M	035M	S	070M
096M	090M	080M	080M	045	050M	042M	S	S	035	S	S	S	S
050	068M	S	040	070M	050	037	042M	036	S	S	S	048M	045M
085M	090M	C	C	C	C	C	C	S	055M	047M	S	S	S
060M	S	S	047	052	S	042	047M	047M	S	S	S	S	S
095M	083	095M	095M	085M	065M	047	040	040	058M	045M	S	C	C
050	069	066	050	052	050	047	042	043	039	040	038	045	050
22	22	19	21	19	19	21	21	20	16	11	8	7	12
072	083	085	080	070	053	055	056	047	047	045	046	048	060
041	055	050	041	040	040	039	036	036	034	034	032	042	044
031	028	035	039	030	013	016	020	011	013	011	014	006	016

Characteristic: h'Es

IONOSPHERIC DATA
Sweep: 1 Mc to 25 Mc in 0.
August 1965

Observed at:
Bangkok, Thailand
Lat. 13.73° N, Long. 100.57° E
105° E Mean Time (GMT + 7 hours)

Hour Date	00	01	02	03	04	05	06	07	08	09	10	11	12
1	S	100*	110	110	110	105	110	105	100	100	105	100	110
2	115	110	U125S	110	110	110	110	110	110	110	110	110	110
3	S	S	S	E	120	120	120	120	110	110	105	U100S	110
4	S	S	S	110	110	110	120	110	110	105	105	100	110
5	S	105	130	E	E	105	110	120	125	110	C	C	110
6	S	S	S	110	S	130	S	140	140	100	100	100	110
7	S	S	S	140	130	120	120	130	130	110	120	110	110
8	120	110	110	115	110	S	130	140	150	130	B	100	110
9	S	120	120	120	120	120	130	128	130	120	120	110	110
10	115	140	110	120	115	110	110	120	S	120	110	100	110
11	110	110	100	110	105	100	100	S	110	B	E	S	110
12	B	110	130	120	120	110	S	110	110	100	110	100	110
13	120	S	110	140	130	130	S	130	130	C	C	C	110
14	C	C	C	C	C	C	C	C	C	C	C	C	110
15	S	S	S	120	130	110	110	100	S	S	C	C	110
16	100	100	100	100	100	100	S	100	105	100	G	S	110
17	S	100	100	100	100	120	S	130	130	140	S	100	110
18	S	125	100	120	115	110	S	120	115	U100S	U100S	100	110
19	S	100	100	100	105H	100	S	120	120	120	100	110	110
20	U115S	S	110	110	105	110	S	130	120	120	120	115	110
21	S	S	E	120	110	S	S	S	130	120	130	130	110
22	S	135	S	105	112	125	S	155	112	110	125	117	110
23	S	120	112	100	100	100	100	100	100	110	110	105	110
24	U110S	110	110	100	100	B	S	110	110	S	U110S	S	110
25	C	C	C	C	C	C	C	C	C	U115S	S	S	110
26	110	S	100	100	100	100	110	100	110	100	130	130	110
27	110	105	110	110	110	120H	S	S	S	105	100	100	110
28	B	100	105	100	105	120	S	120	130	S	120	115	110
29	130	110	100	100	105	100	U110S	S	115	110	110	100	110
30	S	S	100	E	100	B	S	130	130	130	100	S	110
31	S	S	E	E	125	140	S	110	105	100	105	100	110
Median	115	110	110	110	110	110	100	120	115	110	110	100	110
Count	11	18	21	25	27	25	14	25	26	25	22	22	110
UQ	120	120	110	120	120	120	120	130	130	120	120	110	110
LQ	110	105	100	100	105	100	100	110	110	100	105	100	110
QR	010	015	010	020	015	020	020	020	020	020	015	010	110

* Tabulation of 100 = 100 km.

OSPHERIC DATA
to 25 Mc in 0.5 minute
August 1965

10	11	12	13	14	15	16	17	18	19	20	21	22	23
105	100	100	100	100	100	100	100	S	S	S	S	B	110
110	110	110	100	100	100	100	S	100	110	110	120	S	S
105	U100S	100	100	100	100	100	100	100	100	115	S	115	120
105	100	100	100	100	G	100	100	100	100	S	S	S	110
C	C	100	100	130	120	110	105	100	100	100	100	S	S
100	100	100	100	100	125	110	100	100	S	S	S	S	S
120	110	100	100	100	100	100	100	100	100	B	110	B	100
B	100	S	110	G	100	S	G	S	S	S	S	S	S
120	110	100	100	100	110	C	110	110	108	105	100	C	110
110	100	100	100	100	C	C	100	100	090	105	S	100	110
B	S	S	S	S	115	S	090	090	090	S	B	S	S
110	100	115	100	100	G	100	100	S	S	S	S	S	S
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	100	100	100	S	S	S	120	S
C	C	C	C	100	100	100	100	S	S	S	S	100	100
G	S	S	S	S	S	B	100	120	S	S	S	S	S
S	100	100	100	C	B	C	S	100	U100S	120	S	120	130
U100S	100	120	120	120	120	120	100	100	100	S	S	S	S
100	110	S	100	S	120	S	S	S	S	S	105	S	S
120	115	110	115	110	C	125	S	S	S	S	S	S	S
130	130	S	S	S	S	S	S	130	S	S	S	S	S
125	117	112	S	U135S	130	125	115	135	103	S	S	S	S
110	105	100	110	100	100H	110	110	120	120	120	110	120	U110S
U110S	S	130	100	100	100	100	C	C	C	C	C	C	C
S	S	130	S	S	100	100	100	100	110	110	105	S	110
130	130	S	S	C	S	100	100	S	S	110	110	S	110
100	100	100	100	100	100	100	S	S	100	S	S	S	S
120	115	S	100	100	100	125	100	115	S	S	S	140	135
110	100	C	C	C	C	C	C	S	110	100	S	S	S
100	S	S	100	110	S	100	100	105	S	S	S	S	S
105	100	100	100	105	110	100	100	100	100	100	S	C	C
110	100	100	100	100	100	100	100	100	100	110	105	120	110
22	22	19	21	20	19	21	21	20	16	11	8	7	12
120	110	110	100	110	120	110	100	110	110	115	110	120	120
105	100	100	100	100	100	100	100	100	100	100	100	100	110
015	010	010	000	010	020	010	000	010	010	015	010	020	010

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PHERIC DATA
 25 Mc in 0.5 minute
 August 1965

	11	12	13	14	15	16	17	18	19	20	21	22	23
	l2	l2	l2	l	l	l	lh	-	-	-	-	-	f4
	l	l2	l2	l3	l	l	-	lc	f	f	f	-	-
	l	lc	l2	l3	l2	l2	-	l2	f	f2	-	f	f2
	l	l	l	l	-	l	-	l2	f	-	-	-	f
	-	lc	lc	c	c	c4	c	l	f2	f3	f	-	-
	lc	l	l3	l2c	c	l	l	l	-	-	-	-	-
	l	l2	l2	l3	l2	lc	lc	l	f	-	f	-	f
	l	-	l	-	l	-	-	-	-	-	-	-	-
	c3	l	l	lc	c3	-	c	f3	f3	f3	f	-	f
	l2	l3	l	l2	-	-	l	l2	f	-	-	f2	f3
	-	-	-	-	c	-	l	l2	f	-	-	-	-
	l2	c	lc	l	-	l	l	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	l2	l2	l	-	-	-	f	-
	-	-	-	l	l	lc	lc	-	-	-	-	f2	f2
	-	-	-	-	-	-	c2	f	-	-	-	-	-
	l	l2	l	-	-	-	-	l2	f	f	-	f2	f2
	lc	c2	c3	c3	c	c	l	f	f	-	-	-	-
	l	-	l	-	l	-	-	-	-	-	f2	-	-
	l2	l3	c	c	-	l	-	-	-	-	-	-	-
	c	-	-	-	-	-	-	c	-	-	-	-	-
	lc	c	l	l	h	cs	c	f	f	-	-	-	-
	-	c	l	l	l2	c2	c5	f	f	f	f	f2	f
	-	c	l	l	l	l2	-	-	-	-	-	-	-
	c	-	-	-	l	l	l	f	f	f	f	-	f
	l3	l2	l2	l	l	l	-	-	f2	-	-	-	-
	c2	-	l	l2	lc	cl	l2	f	-	-	-	f2	f
	l2	-	-	-	-	-	-	-	f2	f2	-	-	-
	-	l	l	l	-	l	-	f	-	-	-	-	-
	l3	l	l3	l2	l	l3	l	f2	f3	f2	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-

2

MEDIAN VALUES AUGUST 1963

Hour Local	fmin (Mc)	foF2 (Mc)	M(3000)F2 (Mc)	h'F2 (km)	h'F (km)	foF1 (Mc)	N(3000)F1 (Mc)	foE (Mc)	h'E (km)	fbEs (Mc)	foEs (Mc)	h'Es (km)
00	2.0	3.9	2.85	-	340	-	-	-	-	-	4.0	115
01	1.6	3.8	3.00	-	310	-	-	-	-	1.7	3.2	110
02	1.4	3.0	3.35	-	290	-	-	-	-	1.8	3.1	110
03	1.4	2.7	3.30	-	260	-	-	-	-	1.3	2.5	110
04	1.4	2.5	3.50	-	240	-	-	-	-	1.4	3.0	110
05	1.5	2.1	3.50	-	260	-	-	-	-	-	3.6	110
06	2.2	3.1	3.30	-	300	-	-	-	-	2.5	3.7	100
07	2.4	5.9	3.30	270	240	-	-	-	-	2.9	4.1	120
08	2.8	6.7	3.05	310	220	4.3	3.65	-	-	3.2	4.3	115
09	2.8	7.0	2.50	370	200	4.4	3.80	-	-	3.7	5.0	110
10	3.0	6.8	2.40	430	220	4.4	3.90	-	-	3.9	5.0	110
11	3.0	6.4	2.40	435	200	4.5	4.05	-	-	4.0	6.9	100
12	3.0	6.5	2.45	420	200	4.5	4.10	-	-	4.0	6.6	100
13	3.0	6.7	2.40	430	210	4.5	4.10	-	-	4.0	5.0	100
14	3.0	7.1	2.45	400	210	4.4	4.00	3.50	120	3.8	5.2	100
15	3.0	7.5	2.60	380	200	4.3	4.05	3.22	110	4.0	5.0	100
16	2.5	7.6	2.65	360	210	4.2	3.80	3.00	110	3.5	4.7	100
17	2.5	8.5	2.85	310	220	-	-	-	-	3.0	4.2	100
18	2.3	8.6	3.00	280	250	-	-	-	-	2.9	4.3	100
19	2.3	8.8	3.15	-	250	-	-	-	-	3.0	3.9	100
20	2.3	7.0	3.20	-	240	-	-	-	-	3.1	4.0	110
21	2.4	6.0	3.20	-	245	-	-	-	-	-	3.8	105
22	2.2	5.2	3.05	-	280	-	-	-	-	2.7	4.5	120
23	2.3	4.5	2.90	-	315	-	-	-	-	-	5.0	110

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS
BANGKOK, THAILAND
AUGUST 1965

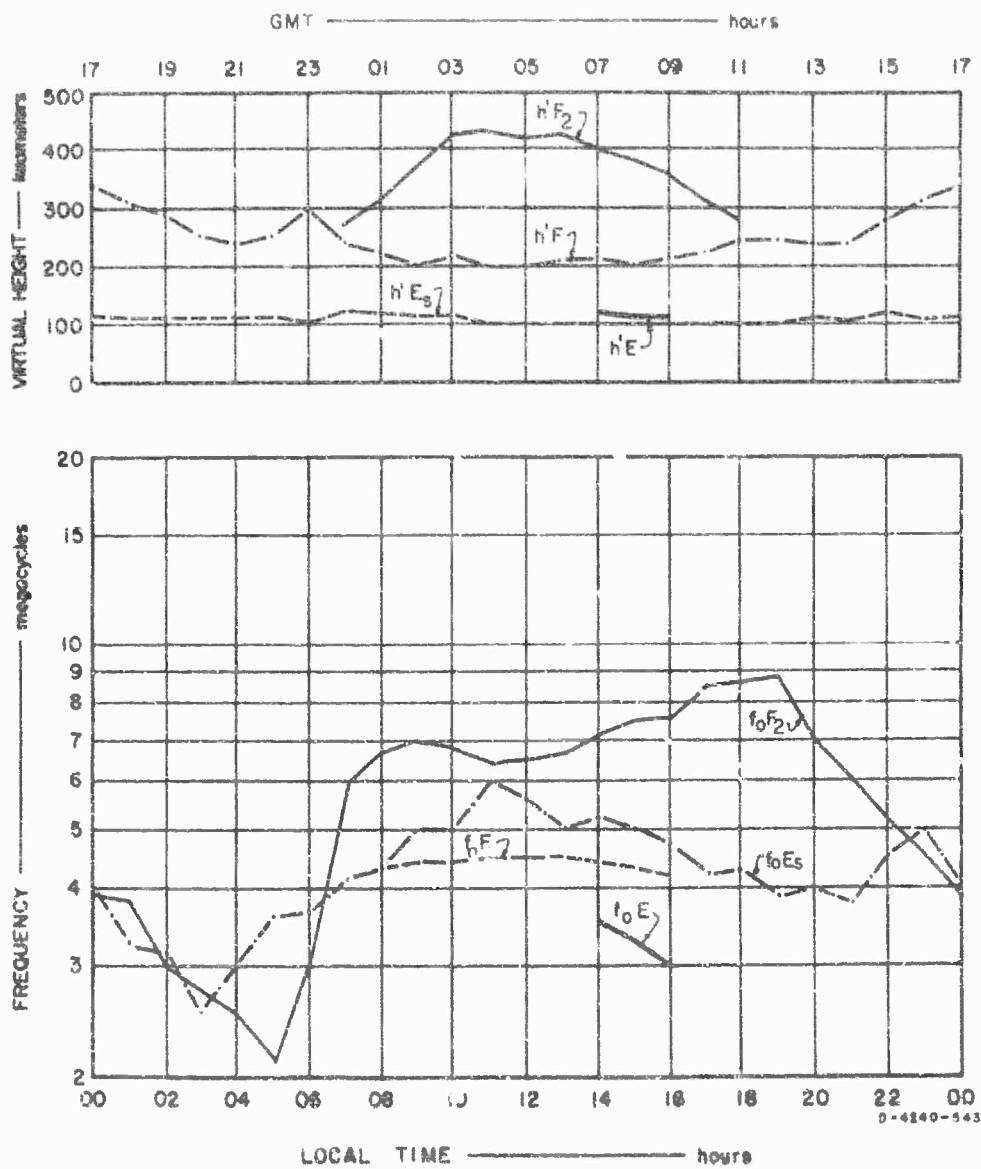


FIG. 1 SUMMARY GRAPHS

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